

Primer									
Name	primer sequence	Length	Tm/°C	Comment	category				
HL-J23110-1	CTTCACCTTACGCCAATGTCGTTTTTA CGGCTAGCTCAGTC	40	66.9		INT				
HL-J23110-2	CGTTAGGGTCAATGCGGGTCGCTTC ACTTACGCCAATGTC	40	70		INT				
J23110-RBS9bp	GATGGCATTGCTAGCATTGTACCTAG	26	59.6		INT				
J231109bp-B0031-1	TCTCACACAGGAAACCGTGAGAGCC CTGGTAGTCAT	36	67.6		INT				
J231109bp-B0031-2	AATGCTAGCAATGCCATCTCACACAG GAAACCGTGAGA	38	66.2		INT				
J231109bp-B0033-1	TCTCACACAGGACGTGAGAGCCCTG GTAGTCATC	34	68.1		INT				
J231109bp-B0033-2	AATGCTAGCAATGCCATCTCACACAG GACGTGAGAGC	37	67.4		INT				
J231109bp-B0034-1	CCATCAAAAGAGGAGAAAGTGAGAGC CCTGGTAGTCAT	37	66.3		INT				
J231109bp-B0034-2	AATGCTAGCAATGCCATCAAGAGAGGA GAAAGTGAGAG	37	64.1		INT				
J231109bp-6 N-1	GGGGGCTAGCGTGTGAGAGCCCTGGT AGTCATC	31	70.2		INT				
J231109bp-6 N-2	CCATCGCGGCTTTTACACTTGGGGG CTAGCGTGAG	35	71.4		INT				
J231109bp-6 N-3	AATGCTAGCAATGCCATCGCGGCTTT CACAC	31	64.9		INT				
INT-B00159bp	TTGATGCCTGGCTACGACATCCCGG TGTGTA	31	66.3		INT				
INT9bp-B0015	GATGTCGTAGCCAGGCATCAAATAAA AC	28	59.6		INT				
J23110-C9bp	ATCTTGGTCGCTAGCATTGTACCTAG GAC	29	62.5		REINT				
B9bp-B0031	TCGCCCTTCTAATGCCATCTCACACAG GAAA	30	62.4		REINT				
B9bp-B0033	TCGCCCTTCTAATGCCATCTCACACAG GAC	29	63.9		REINT				
B9bp-B0034	TCGCCCTTCTAATGCCATCAAGAGGA GAAA	30	61		REINT				
B9bp-6N	TCGCCCTTCTAATGCCATCGCGGCTTT CAC	29	65.3		REINT				
B-RBS9bp	GATGGCATTAGAAGGCGATGAAGTC TGGGG	30	65.1		SOCKET				
A	GACCAACGACGGGACACGCCAAGC CCTGAGCTCATTAACACAG	44	72.8		GOI				
A-KAN	GAGCTCATTAAACACAGAGCTGATC CTTCAACTCA	35	63.2		GOI				
B	AGAAGGCGATGAAGTCTGGGGAGA GGAGTGGGAGGAGGGCACATAAGA A	49	72.3		GOI				
KAN-B	GGGAGGAGGGGCACATAAGAACTGAT TAGAAAAACTCATCG	40	65.8		GOI				
C	GACCAAGATCGAGACGCTGCGCCTG GCCATCGCTACATC	40	73		GOI				
C-KAN	GCCTTGGCATCCGCTACATCAGCTG ATCCTTCAACTCA	38	69.4		GOI				
D	AACCGCAGGCTGAGCTCTGGGGA GGGCTTGCTTCACTGAG	41	73.7		GOI				
KAN-D	GGAGGGCTTGCTTCACTGAGCTGAT TAGAAAACTCATCG	40	66.9		GOI				
KAN-C	CGATCTTGGTCTGATTAGAAAACT CATC	30	59.6		GOI				
LacHL	AGCATCAGGGGAAAACCTTATTATC AGCCGGAAAACCTACCG	43	67.3						
LacHR	CGCGCAGTACAGCGGTTCTTACTG GCATTGATGACGCTTGG	42	71.4						
LacHL-Tetr-1	ATCAGCCGGAAAACTACCGaaactgg tctgacagctcg	40	68.9						
B0015-LacHR-1	AGGAACCGCTGTACTGCGGClataaac gcgaagaagggcccA	40	70						
tetr-J231109bp	tagccgtlaagtttcttagagctcaggtggca	32	63.5						
tetr9bp-J23110	ctaagaactttacggctagctcagtc	27	59.6						
J23110-A9bp	CTGGTGGTCGCTAGCATTGTACCTA GGACTG	31	66.3						
J231109bp-A	AATGCTAGCGACCAACGACGGGACC AGCCAA	31	68.9						
B-RBS	TCGCCCTTCTAGAGAAAGAGGAGAAA TA	27	58.1		SINGLE DOUBLE				
T-HR	AAATCCCGAATCTCTATCTGTATAAA CGCAGAAAGGCCCA	41	65.7		SINGLE DOUBLE				
HR	AAAACCCGAAACTGTGGAGCGCCGA AATCCGGAATCTCTATCGTG	45	69.7		SINGLE DOUBLE				
HL	CGTTAGGGTCAATGCGGGTCGCTTC A	26	64.3		SINGLE DOUBLE				
B-C	CGATCTTGGTCAGAAAGCGATGAAG TCTGGG	31	66.3		SINGLE DOUBLE				
D-RBS	CCTGCGGTTAGAGAAAGAGGAGAAA TACTAGATGC	35	64.4		SINGLE DOUBLE				
XYWS1-F	CGTTAGGGTCAATGCGGGGTC	20	59.5		SINGLE DOUBLE				
XYWS1-R	CTCTTTCTCTAGAAGGCGAT	20	53.4		SINGLE DOUBLE				
XYWS2-F	TCGCCCTTCTGACCAAGATCGAG	22	59.5		SINGLE DOUBLE				
XYWS2-R	CTCTTTCTCTAACCGCAGGC	20	57.4		SINGLE DOUBLE				
tetr-J231009bp	tagccgtlaagtttcttagagctcaggtggca	32	64.8		SINGLE DOUBLE				
tetr9bp-J23100	ctaagaacttgacggctagctcagtc	27	61.1		SINGLE DOUBLE				
LacHL-Tetr-1	ATCAGCCGGAAAACTACCGaaactgg tctgacagctcg	40	68.9						
B0015-LacHR-1	AGGAACCGCTGTACTGCGGClataaac gcgaagaagggcccA	40	70						
LacHL	AGCATCAGGGGAAAACCTTATTATC AGCCGGAAAACCTACCG	43	67.3						
LacHR	CGCGCAGTACAGCGGTTCTTACTG GCATTGATGACGCTTGG	42	71.4						
pSB4A5-J06702	ACGTGCGCCGGCGATGATCATTATAAA CGCAGAAAGGCCACCC	43	71.2		SET				
J06702-attB9	GCCGGCCGAAAGAGGAGAAATACT AGATGGT	32	64.8		SET				
J23110-attB1	CGTCAGGATCATCGGGCTTTACGG CTAGCTCAGT	35	69		SET				
J23110-attB2	GTGACGACGGCGGTCTCCGTCTCGT CAGGATCATCCGGGCTTT	42	74.4		SET				
J23110-attB3	CTCCTCTTTTCGGCGGCTTGTGCA CGACGGCGGTCTC	38	73.7		SET				
J23110-attP1	TGGTGACGGTACAAACCCGCTAGC ATTGTACCTAGG	37	67.4		SET				
J23110-attP2	GGTCAACCACCGGGTCTCAGTGGT GTACGGTACAAACCCGC	42	73.4		SET				
J23110-attP3	TTTCTCCTCTTTCTGCGTTTGTCTG GTCAACCAACCCGC	38	67.2		SET				
AttP9-K137058	AAACACGAAaaggaggaaatactagat	29	56.8		SET				
K137058-pSB4A5	TAAGCGCCGGCGAAGATCTCTATAAA CGCAGAAAGGCCCA	40	68.9		SET				
pSB4A5-J06702	Designed				RESET				
J06702-attL9	Designed, same as J06702-attB9				RESET				
J23110-attL1	GGTGTACGGTACAAACCCGCTAGCA TTGTACCTAG	35	66.7		RESET				
J23110-attL2	GTGACGACGGCGGTCTCAGTGGT GTACGGTACAAACCC	39	72.3		RESET				
J23110-attL3	Designed, same as J23110-attB3				RESET				
J23110-attR1	GTCAAGGATCATCCGGGCTTTACGGC TAGCTCAGTC	35	69		RESET				
J23110-attR2	TCAACCACCGCGGTCTCCGTCTGTC AGATCATCCGGGC	38	73.7		RESET				
J23110-attR3	Designed, same as J23110-attP3				RESET				
AttR9-K137058	Designed, same as AttP9-K137058				RESET				
K137058-I0500-9	TTGTCATAATATAACGCAGAAAGGC CCA	29	58.2		RESET				
K137058-9-I0500	GCGTTTATATTATGACAACTTGACGG CTACA	31	59.6		RESET				
I0500-Xis9	TGTTAAGGTGCTAGCCCAAAAAAC GGGT	29	61		RESET				
Xis9-B0015	TTGCTTTTATTTGATGCTGGTTATTA TTT	30	54.2	FALSE!	RESET				
Xis9-B0015	AAATAATAACCAAGGCATCAATAAAA CGAA	30	54.2		RESET				
B0015-pSB4A5	Designed, same as K137058-pSB4A5				RESET				
attP-red9	CCTCCTTAGCTGGTTTGTCTGGT CAACC	31	64.9		SUPPORT DEVICE				
attP9-red	AAACCACGATCTAAGGAGGTTATAAA AAATGG	32	58.4		SUPPORT DEVICE				
red-GFP9	CTCCTCTTCCATCGCCATTGCTCCC CAAATA	32	64.8		SUPPORT DEVICE				
red9-GFP	ATGGCGATGGAAGAGGAGAAATAC TAGA	29	59.6		SUPPORT DEVICE				
XYWS3-F	TTGGGCTAGCACCTTAACAACTA	24	56.2	扩增 Sequence3					
XYWS3-R	GATGCCTGGTTATTATTAGCAGCA	25	56.3	扩增 Sequence3					
XYWS4-F	AATGCTAGCGACCAAGATCGAGA	23	57.8	扩增 Sequence4					
XYWS4-R	CTTCATCGCCTTCTAATGCCATC	23	57.8	扩增 Sequence4					
PSB4C5-HL	ACGTGCGCGCGATGATCATCGTTA GGGTCAATGCGGGTC	40	72						
HR-PSB4C5	TAAGCGCCGGCGAAGATCTCAAAAC CGAAACTGTGGAGCG	41	70.7						
E0420-150F	CGGCAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATCGacttctcaa gtccgca	62	75		Gradient				
E0420-150R	GCTGCGCGATGATTTACCCGTGC ACCGCTGGATAACGACATTgtactccag cttltgccc	62	75.6		Gradient				
K137058-50F	CGGCGAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATCCTCTTTTA CCAGACACCACTTAC	65	73		Gradient				
K137058-50R	GCTGCGCGATCAGTTACCCCGTGC ACCGCTGGATAACGACATTtccgaagg gcagattgt	61	73.9		Gradient				
K404113-1000f	CCGTGAGGGGCGAGGAAGAGCACT	24	66.4		Gradient				
K404113-1000F1	ATAGTTTTTCTGCGGCCCTAATCCCC TCGCGCGGACGAAGCA	42	70.4		Gradient				
K404113-1000F2	CGGCAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATC	42	71.4		Gradient				
K404113-1000f	GGGGGCTATACCTCTCGGTCTTGC	24	64.7		Gradient				
K404113-1000R1	GTGACCGCTGTGATAACGACATGTGA TGGAGCCGGGGGTGGTGACG	45	74.3		Gradient				
K404113-1000R2	GCTGCGCGATCAGTTACCCCGTGC ACCGCTGGATAACGACAT	42	72.4		Gradient				
K404113-500f	CCGCCGGAGCAGAAAATG	19	59.5		Gradient				
K404113-500F	CGGCAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATCCCGCCCG GAGCAGAAAATG	61	75.9		Gradient				
K404113-500F1	AGTTTTTCTTGGGCCCTAATCGGGG ACGCGCGCGGTGGTAATGAC	44	72.8		Gradient				
K404113-500F2	CGGCAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATC	42	71.4		Gradient				
K404113-500f	CGCCCTACTCCCGTGCTTTCG	21	65.4		Gradient				
K404113-500R	GCTGCGCGATCAGTTACCCCGTGC ACCGCTGGATAACGACATCGCCCTA CTCCCGTGCTCTCG	63	78		Gradient				
K404113-500R1	CGTGACCGCTGGATAACGACATTC GTGGGCCGCGCTTGTCTCG	44	74.6		Gradient				
K404113-500R2	GCTGCGCGATCAGTTACCCCGTGC ACCGCTGGATAACGACAT	42	72.4		Gradient				
K592101-300F	CGGCAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATCtccagtcgaa cactltgca	62	74.3		Gradient				
K592101-300R	GCTGCGCGATCAGTTACCCCGTGC ACCGCTGGATAACGACATtggctgtcagtc tgaacgct	62	75		Gradient				
MUC2-1500f	CCCCGACCTCCAGCACAGTTTAT	24	61.3		Gradient				
MUC2-1500F	CGGCAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATCCCCGAC CTCCAGCACAGTTTAT	66	75.3		Gradient				
MUC2-1500r	TAGGGGTTGTCTGTGAAATGGTG	24	59.6		Gradient				
MUC2-1500R	GCTGCGCGATCAGTTACCCCGTGC ACCGCTGGATAACGACATTAGGGGT TGTCTTGAGAAATGGTG	66	75.3		Gradient				
MUC2-2000f	TCGGCTGTGGACCTCTCGGATAT	24	63		Gradient				
MUC2-2000F	CGGCAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATCTCGGCTG TGGACCTGCTGATAT	66	75.9		Gradient				
MUC2-2000r	GTGGGGGTGGTGGGAGGGTGAT	23	66.7		Gradient				
MUC2-2000R	GCTGCGCGATCAGTTACCCCGTGC ACCGCTGGATAACGACATGTGGGGG GTGGTGTGGTGATTGT	65	78.1		Gradient				
MUC2-3000f	TCGGCTGTGGACCTCTGCTGAGTAT	24	63		Gradient				
MUC2-3000r	TGGAGGGGTGGTTGTGGGTATTGT	24	61.3		Gradient				
MUC2-5000f	CTGGTGCCGCTGGAGCCGTATCTG	24	66.4		Gradient				
MUC2-5000r	GGTTCTCTGTGGTGGTGGTTGTC	24	61.3		Gradient				
K404113-1000F	CGGCAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATCCCGTAC GGGACGGGAAGAGCACT	66	77.2		Gradient				
K404113-1000R	GCTGCGCGATCAGTTACCCCGTGC ACCGCTGGATAACGACATTGGGGGCT ATGCTCTCGAGCTTGTGC	66	77.2		Gradient				
MUC2-3000F	CGGCAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATCTCGGCTG TGGACCTGCTGAGTAT	66	75.9		Gradient				
MUC2-3000R	GCTGCGCGATCAGTTACCCCGTGC ACCGCTGGATAACGACATTGGAGGG GTGGTGTGGTGATTGT	67	75.9		Gradient				
MUC2-5000F	CGGCAGTAAGGCGGTTCGGGATAGT TTTCTTTGCGGCCCTAATCTGCTGGTGC GCTGGAGCGCCTACTG	66	77.2		Gradient				
MUC2-5000R	GCTGCGCGATCAGTTACCCCGTGC ACCGCTGGATAACGACATGTTTCTC TGTGGTGGTGGTTGTCA	66	75.9		Gradient				
pbsk1500F1	GTTTTCTTTGCGGCCCTAATCCTTCG AGCTTGTCTCTCGCT	40	68.9		Gradient				
pbsk1500R1	GCACCGCTGGATAACGACATTCC TCCCCGGCTACTCTTTT	41	70		Gradient				
pbsk2000/3000F1	GTTTCTTTGCGGCCCTAATCCCCG CCTCTCGGATATGTTGA	40	68.9		Gradient				
pbsk2000R1	GCACCGCTGGATAACGACATAAAAT CGCAATGCGCAGCACC	40	68.9		Gradient				
pbsk3000R1	GCACCGCTGGATAACGACATCATAC GAAGCCACGCAAGCA	40	68.9		Gradient				
Tetr-HL-F1	TCACCTACGCCAATGTCTGTTAAACTT TGCTTGACAGCTCG	40							
Tetr-HR-R1	AATCCCGAATCTCTATCGTGGTTTCT TAGACGTACAGTGGC	41							
YanzhengW-F	GCAGTAAGGCGGTTCGGGATAGTTT	24	61.3						
YanzhengW-R	TTACCCCGTGCACCGCTGGATAA	23	61.3						
YanzhengN-F	ACTTTTCAAGAGTGCCATGACCC	23	57.8						
lacZ-detectF	GCAGATCCCAGCGGTCAAA	19	57.3						
lacZ-detectR	CCGCCAGTCAGGCTTTCTTT	20	57.4						
300bpinlacZF	GCCATGCCCGAAGGTTATGT	20	57.4						
LacZ1439-detectF	GTGCTAATCAGCACCCGATC	20	57.4						
LacZ1439-detectR	GTTGCGTGACTACCTACGGG	20	59.5						
Lacoperon-detectF	ACGGCAGATACACTTGTCTGA	20	55.4						
Lacoperon-detectR	CGCTGGGTGTTTACTTTCGGT	20	57.4						
TetrR-detectR	GCCGGGAAGCGAGAAAGAATCA	20	57.4	tetr内部，用于检测 tetr 重组					
pSB4A5-Detect-F	tctgcagcgccgctactagta	23	63.1	pSB4*5 骨架两边，用于检测插入片段，可由 VFVR 代替					
pSB4A5-Detect-R	attcgcgccgctcttag								